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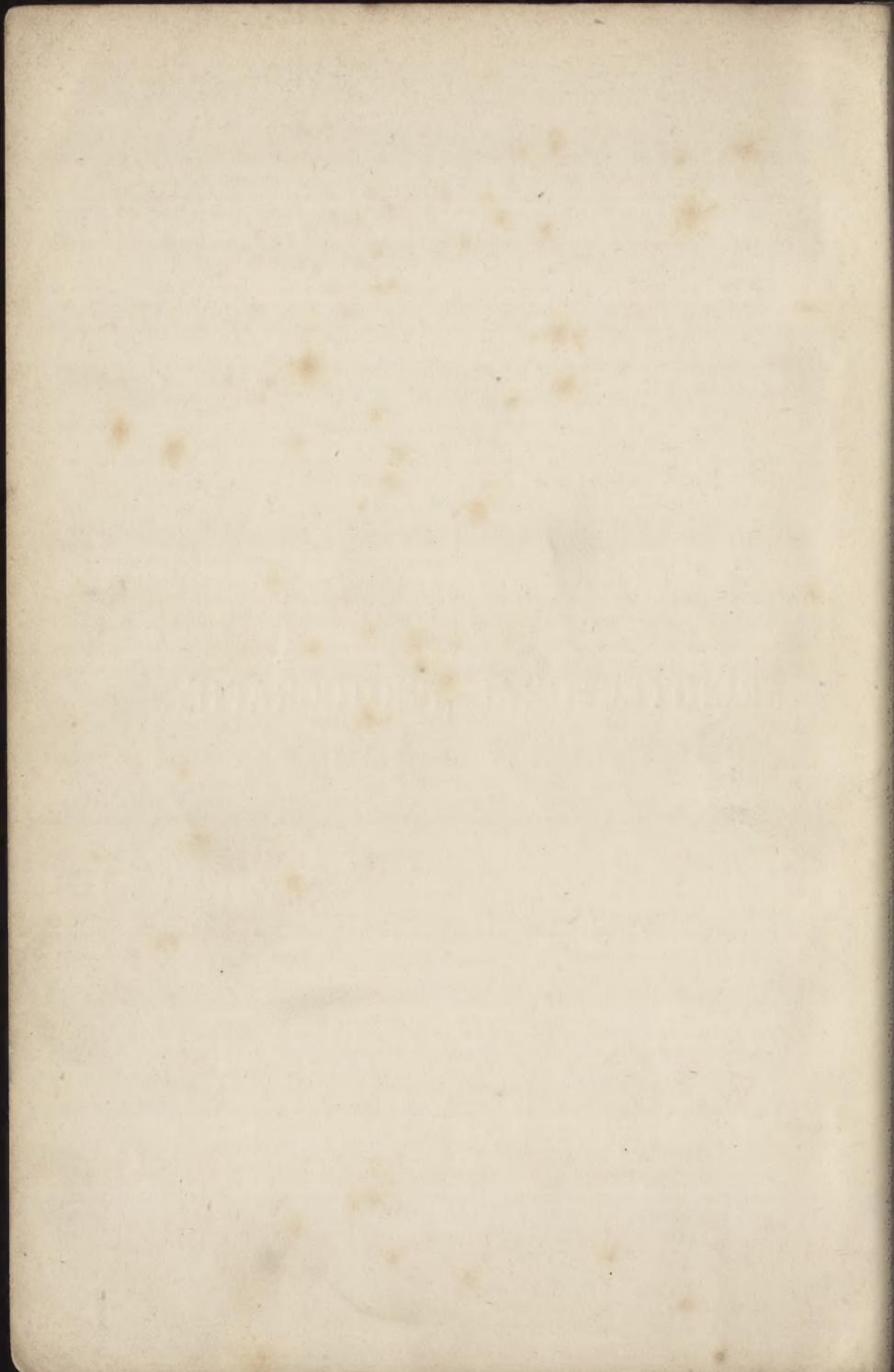
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ARCHITECTURAL PHOTOGRAPHY.



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*PRACTICAL LESSONS AND SUGGESTIONS
FOR AMATEURS.*

BY

G. A. T. MIDDLETON,

Associate of the Royal Institute of British Architects; Author of "Surveying and Surveying Instruments," "Stresses and Thrusts," "House Drainage," "Linear Perspective," etc.

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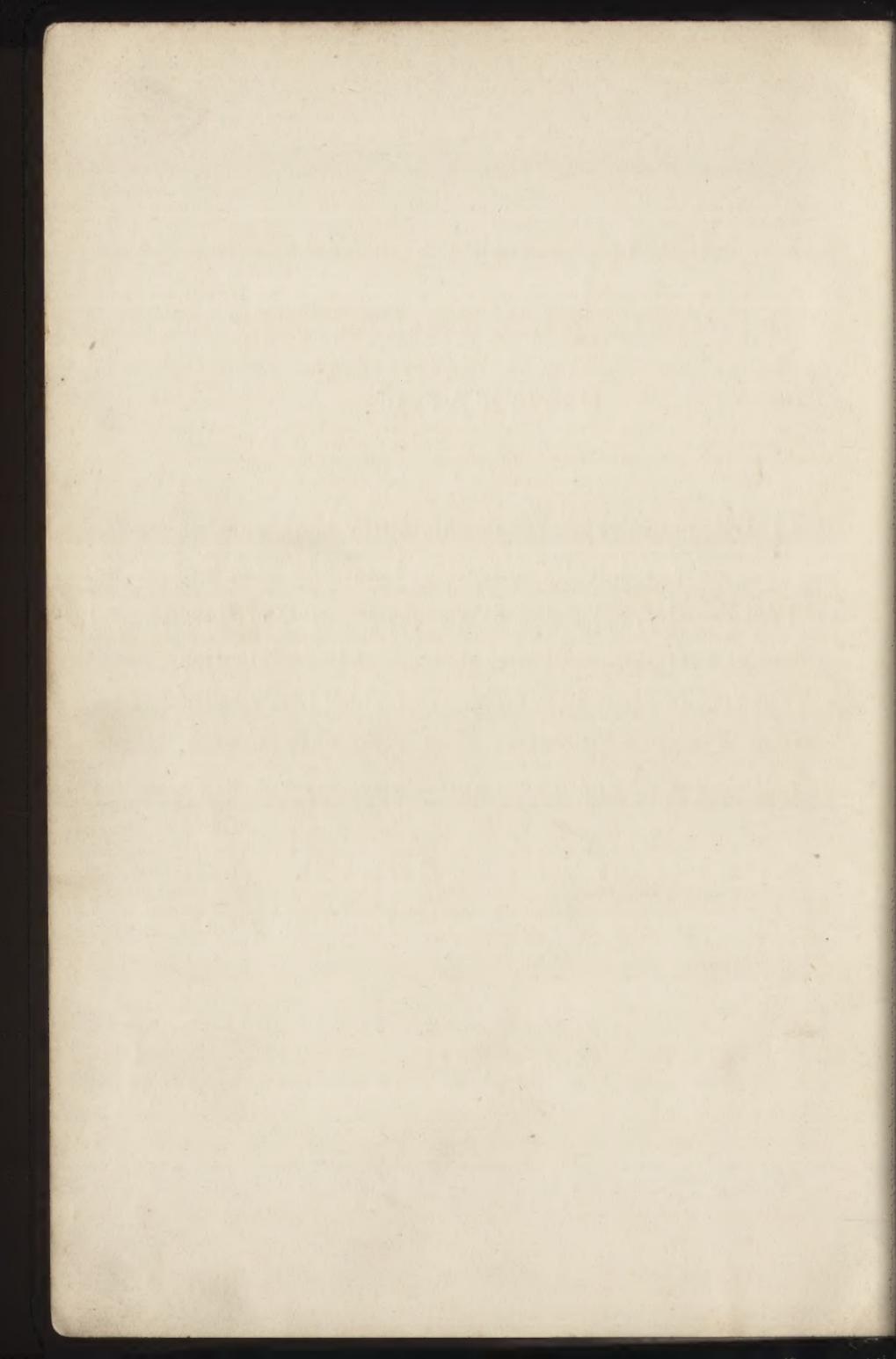


P R E F A C E .

THE chapters of which this little book consists were originally contributed to *The Amateur Photographer*, appearing at various intervals of time, and if therefore somewhat disjointed, their intention is rather to show how architecture should be studied from a pictorial point of view than as a science. Believing that there is a distinct need for help in this direction amongst amateur photographers, these articles have now been collected into book form.

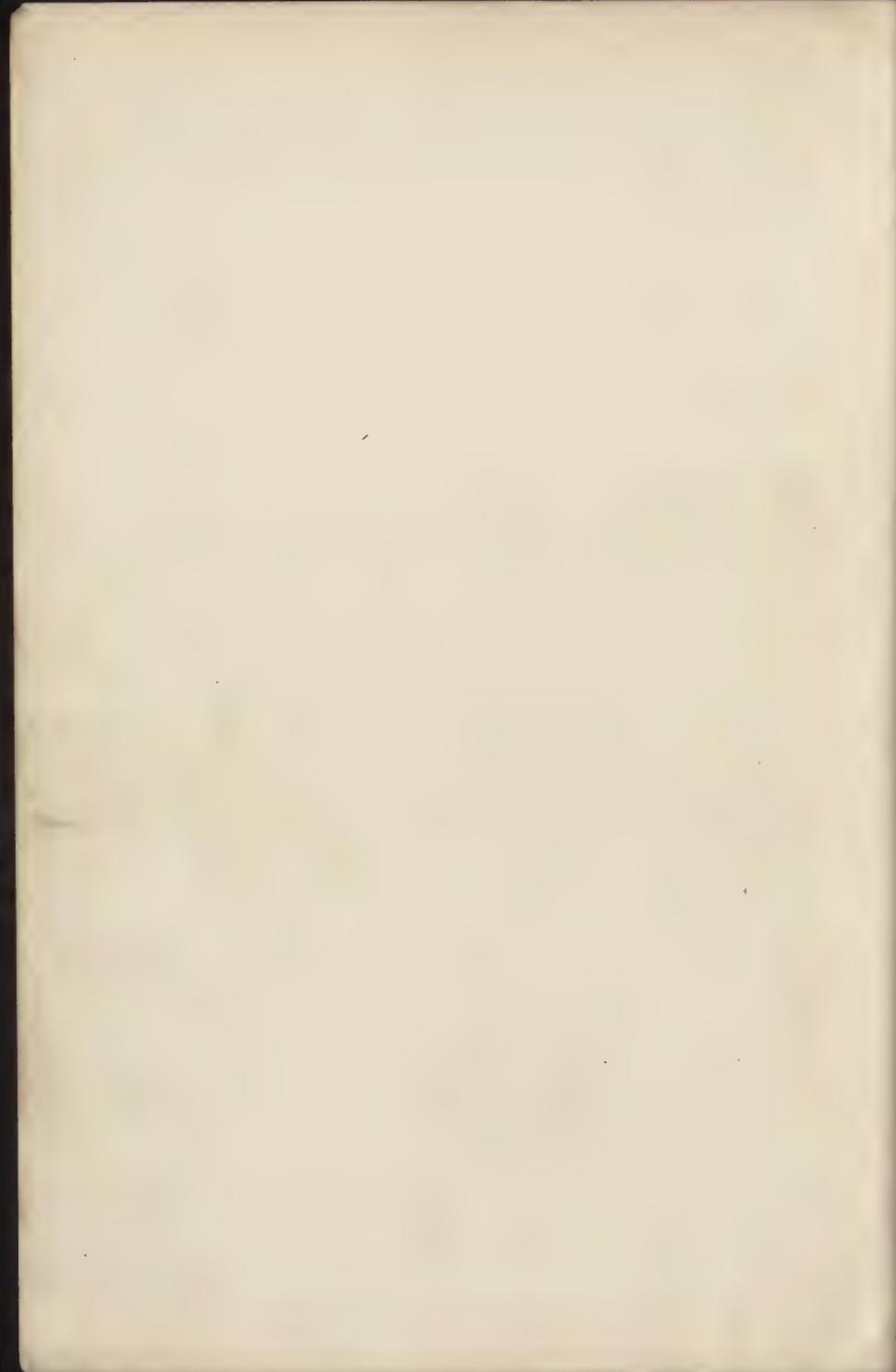
G. A. T. MIDDLETON.

January, 1898.



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ARCHITECTURAL PHOTOGRAPHY.

CHAPTER I.

HINTS TO BEGINNERS.



PILGRIMS' STEPS, CANTERBURY
CATHEDRAL.

(*Camera both tilted and out of level.*)

THE beginner in photography, like the beginner in other things is usually ambitious, and thinks that he will achieve the best possible results during his first few weeks.

He generally starts off with portraiture, or some other different branch of the subject; but he will be wise to confine his earlier attempts to buildings, which are perfectly steady during the period of exposure, are always to be found when wanted, and, again, do not give a man a black eye for producing a caricature in place of a portrait.

Even so, however, it is not to be expected that very high class work will

be done at first, for there are certainly several difficulties to be overcome, which, however, are of such a character as to give the beginner an ample insight into the uses of the different parts of his apparatus, and consequently a control over future results, whatever be the branch of photography he may ultimately take up specially.



FARM HOUSE, BIDBOROUGH.

(*Camera not level.*)

The first difficulty encountered is always that of a selection of apparatus, and it is scarcely possible to denounce too strongly the prevalent idea that a small hand-camera is the right thing to start with. It is indeed a capital idea for the plate makers, for it leads to numberless mistakes and waste of plates. It is far better to have a stand-camera of somewhat solid make, which, if blown over by a gust [of

wind on to a hard pavement, will not necessarily fall into “’ickle, ’ickle bits.” The first camera should certainly be a small one, either a quarter-plate or 5 by 4, both for economy and ease of carrying, and because the results are sufficient for most purposes ; in fact, the experienced worker



NOTRE DAME, CHALONS-SUR-MARNE.

(Camera tilted.)

possessing several cameras will more often use the small one than the large, especially if he is travelling about much.

The camera, besides being strong, should be of the square bellows type, and provided with all the usual movements to rather an exaggerated extent.

For instance, it is necessary to have a very considerable rise to the front, so that the lens can be lifted high when a view of a tall building is desired. Otherwise, with the lens centrally placed, it is possible to obtain a picture of which three-fourths are roadway and the odd one-fourth just the low portion of the building. A slight fall to the front is also useful at times, for a small camera can be carried readily to the top of a building, and photographs taken from a height are, of course, subject to contrary conditions to those taken from below. Occasionally it is useful to have side slides also, as when cramped in a confined place in a narrow courtyard, where it is impossible to plant the camera quite opposite the feature which is being aimed at.

It will be said by the beginner that it is quite easy to do all this by means of tilting the camera up or down, or sideways; but if he tries the experiment he will find that distorted perspective is the result, as buildings will then appear to be leaning forward or falling on their backs, or pressing lovingly against one another. Many workers prefer to overcome this difficulty by means of a swing-back rather than a sliding front, for the object sought is that the back, and the plate which it carries, shall be absolutely vertical during exposure, and the lens may be tilted to any extent if the back be kept to the vertical; but with the swing-back it is quite impossible to have focus all over the plate, and though the experienced worker may take advantage of this and use it with good effect, it is not well for the beginner to try to do so.

Whichever means be adopted it will be seen that a lens is needed which will cover a much larger plate than the one used. Thus for architectural work a half-plate lens should be used for a quarter-plate camera. The lens, too, must

be a really good one, showing no curvature of lines at the edges of the plates. Occasionally quite cheap lenses are to be met with which meet these requirements, and one of the best the writer ever had belonged to a guinea set ; but this is not to be depended upon. Trial is the only way of ascertaining whether a lens is good in this respect or not.

It is best to have two or three interchangeable lenses of different focus, for while the wide-angle and short-focus lenses are absolutely necessary in small rooms and other cramped positions, they should not be used if one with longer focus will meet the case. A wide-angle view, though optically correct, is always visually faulty, as the human eye can only see clearly when the view is included within quite a narrow angle, and a picture does not look right which takes in a wider one.

The tripod, like the camera, should be strong, and for convenience of carrying must have folding legs, and should certainly be provided with a turn-table.

A wise selection of plates will save many disappointments, and the advantage of having a steady object to photograph is here of considerable assistance to the beginner, as he is not compelled to use plates of great rapidity. On the whole, the writer has found that plates of "ordinary" speed have produced the best results, more rapid ones having only been required in order to save time in very dark interiors and upon the few occasions when there have been moving figures loitering about in Continental churches. These, if slow plates were used, would probably not have been seen at all, or if they stayed still in the same position for a few moments and then moved to another place, there would be a blur ; the choice, therefore, rests between very slow plates and extremely rapid ones, such as will obtain good photographs of a fairly well-lit interior with an exposure measured

by seconds only. These rapid plates are extremely difficult to manipulate to the beginner, especially when travelling about, as it is difficult to find a perfectly dark room for changing, and he had better avoid them altogether. There is also greater range of exposure in the slower plates, so that he is not so liable to mistakes in this important respect. On the whole, the writer has found that multiple-film plates have been the most satisfactory, and as they are easy to manipulate he advocates their use, although they are a trifle expensive. They have a great range of exposure, and the thing to be done is to expose sufficiently long without being frightened about going too far; while the results are good in all respects, with good gradation of tone and almost entire absence of halation, and this under the most trying circumstances and without the trouble of "backing."

In the matter of focussing there is often difficulty, owing to the darkness of stone and of the positions in which many beautiful architectural features are placed; and it is by no means infrequent to have to focus a lighted match held by a friend, who would be standing where the greatest sharpness was required.

The exposure needed in different positions varies so greatly that it is difficult to lay down rules. Possibly the best plan is to follow the exposure tables issued by the makers with many brands of plates, increasing the exposure, however, rather than diminishing it, if there is any doubt. The interiors of churches, according to their lighting, will need exposure varying so greatly as from five minutes to an hour and a half with the same plates and the same stop. Many Continental churches, for instance, with their whitewashed walls, can be taken in quite short time, whilst the crypt, say, of Canterbury Cathedral would need all that could be given to it; an exposure of

two days even has been known. It is in these very dark places, too, where the greatest contrasts of light and shade often occur, and as it is the shade that has to be exposed for, a plate should be used that will stand these violent contrasts without the resulting picture being of the soot and chalk type.

The architectural photographer is necessarily one who travels much, for, as he cannot bring his buildings to his camera, he must, of course, take his camera to his buildings. He therefore wants a compact travelling outfit, with a good strong waterproof bag to carry everything in ; and he will find that a piece of black mackintosh will serve both to protect his camera from wet and, as a focussing cloth, be quite as useful as the usual piece of black velvet. A changing bag is also extremely useful, especially as you cannot depend upon a good dark-room for changing in an hotel, for even a bedroom may be provided only with Venetian blinds, and have an electric arc lamp opposite the window. Films are lighter to carry, and for this reason more convenient than plates, but there is more difficulty with them at some foreign customs stations. A good many photographers carry developers with them in tabloid form, in order to see from time to time that all is going on right by developing an occasional plate ; but although this may be handy, the development is generally difficult and done at great inconvenience, and the developer used not being that which would be employed at home, the result is rarely a thorough success. It is better, therefore, to pack the plates after their exposure in the boxes and in the manner in which they were packed before, and to defer development until the home dark-room is reached. Of course, for this to be successful, it is necessary to keep a careful record of every plate used, giving the time

of exposure, date, subject, condition of light and stop, so that when developing you have some idea as to what to expect. The writer's plan is to write index numbers on the outside of each box, the plate at the bottom of each box being numbered one, and so on up to twelve, whilst the detailed particulars are kept in a reference book similarly numbered.

CHAPTER II.

THE EFFECT SOUGHT.



ARCHITECTURE and photography appear at first sight to be arts of such utterly diverse character as to have no points in common whatever. But first impressions are often mistaken ones. All arts are one, in fact, and though some are more closely related than others—sculpture, for instance, being more closely akin to architecture than is photography—the family resemblance is always to be found if sought after. When it is intended to represent one art through the

medium of another, there *must* be this seeking, else a wrong impression will probably be conveyed, and in the photographing of architectural objects there is, or should be, this representation.

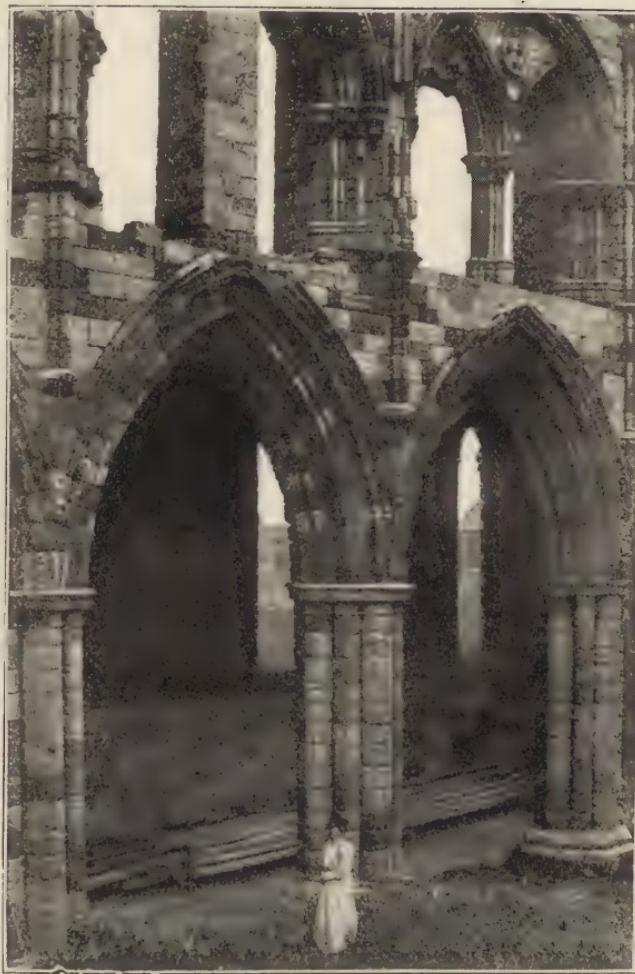
Too often the result is a hard, unfeeling view, utterly devoid of sentiment, however much there may be in the building represented—a photograph has been taken, but the camera has been treated as an exact scientific instru-

ment, and not as a workman's tool capable of responding to its master's touch. The difference is precisely that between architecture and mere building—the one instinct with life and feeling, the other no more than a heap of material scientifically pieced together to enclose a room within four walls.

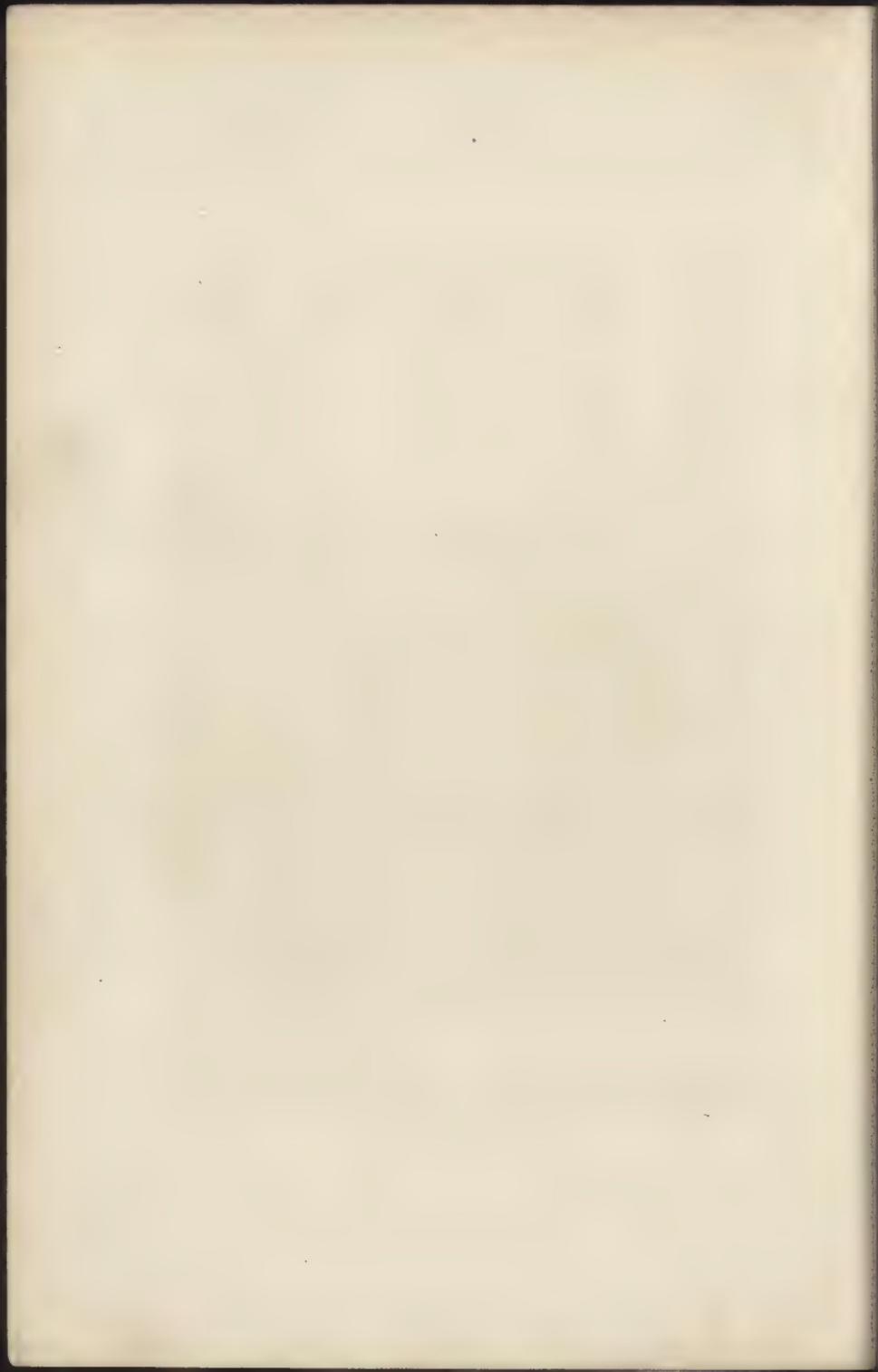
Here it is that the point of contact comes. Architecture and photography are both reflective arts, and so he who would photograph architecture aright, not for the purpose of scientific diagram making, but to represent the effect produced on the senses by the object illustrated, must have at least some idea of what sentiment may naturally be expected in any given building, else, not knowing, he cannot look for it or find it. Architecture has at all times reflected the feelings and aspirations of the people amongst whom it has flourished, and in some instances is the only index left to us to show that the nations of antiquity were not composed of dolls or automatons, but of living, thinking, loving, hating human beings, like unto ourselves.

The Pyramids of Egypt, for instance, tell of a people to whom stern simplicity, solidity, and mass, as representing power, were more than that elaboration of detail which indicates refinement, this being found in its highest perfection in the Grecian work of a much later date, applied to hard and rigid outlines mathematically corrected to produce the effect sought after—indicating cultivation of mind, but little soul. Then Rome, with its aggressive militarism and its sensuous private life co-existent, is magnificently exemplified to us by the stern remains of aqueducts, and roads, and forts, and by its gorgeous carving and mosaics.

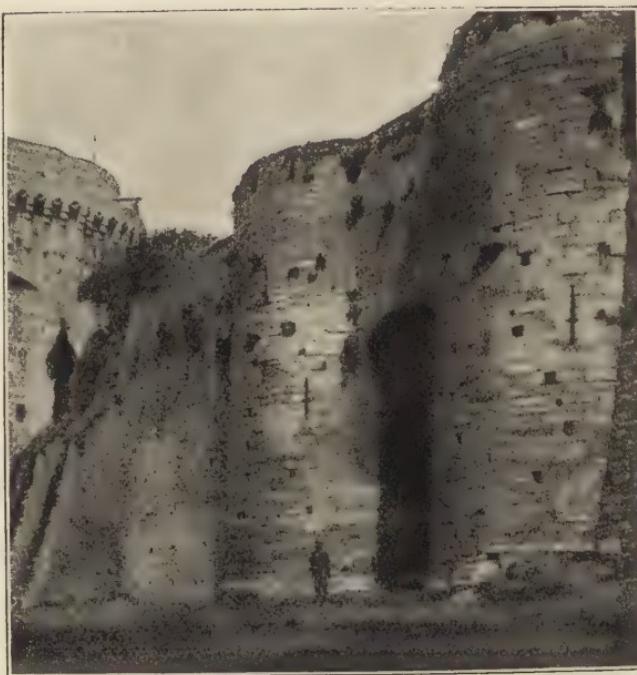
Then in England alone we have buildings which tell aloud to him who cares to read of the life of our forefathers, as nothing else can do. There is the stern work of the



NAVE ARCADE, WHITBY ABBEY,



Norman feudal lord, followed after but a short interval by the elaborate soul-elevating Early Gothic of the days of chivalry. The Norman buildings of the twelfth century, with their thick walls, massive construction, semi-circular arches and flat proportions, all, whether castles or churches, speak out



THE CHÂTEAU, DINAN, BRITTANY

of the masterful repression by the mailed warrior of a subject people; and the contrast is most marked with those of the following period, having thin walls, lofty proportions, and elegance both of general form and detail, all combined

with perfect workmanship. It was an age whose spirit is best appreciated in its architecture—an age of lofty aspiration, true nobility, and manliness, when the armed men lived for honour. It was the time of the Crusades, when every one, and all they did, was inspired by a noble, even if we now think in some respects a mistaken, Christianity; and our great cathedrals and abbeys, as well as our village



HÔTEL NOTRE DAME, DOL, BRITTANY.

churches are, all alike, the monuments of the age, reflecting its glorious energy and its high ideals.

But, as at all times, excessive zeal soon wore itself out, and the brilliant early Gothic period in France and England was as evanescent as had been the brilliant age of intellect in Greece. First came development and then deterioration in the objects and in the lives of the people, reflected, as it was bound to be, by the architecture. The ecclesiastical

work showed the change most plainly, as the simply living, holy men of early monastic times were succeeded by those who put ostentatious display first. There is always something substantial, however, in English architecture, redeeming and often obliterating the defects of even the most luxurious times, and rendering in stone the difference



A HOUSE IN BALHAM.

of character between the English and the Continental nations.

So the tale goes on, and could be elaborated with many a side issue and continued down to the present day—another age of excessive energy, more cosmopolitan and more scientific than any previous, and telling its tale of great diversity in the many buildings for many different

purposes and with different architectural expression rising around us everywhere.

And if it is all this which architecture tells, it is this likewise which photographs of architectural subjects should reflect. Find out what your building means, and endeavour to represent *that* rather than the dry-as-dust archaeology of moulding and of date; unless, indeed, you be making a photographic survey for the purpose of precise record, or for the benefit of an architectural student who needs to know "how it is done." Even he, however, must first understand what *is* done; and much more so must the general onlooker.

Considering our illustrations, then, it will be seen that the massive walls of the Château at Dinan, representing sheer weight and passive resistance, demanded the greatest breadth of treatment and delicate tone gradation, while the nave arcade of ruined Whitby Abbey, an example of great beauty, symbolising beautiful and holy lives of high aspiration in lines of the simplest character, sharply defined originally, now mellowed by neglect but still most beautiful, called for a combination difficult to get and only partially obtained.

The courtyard of the inn at Dol tells of nothing more than rough and simple country life—an effect somewhat spoilt by the presence of the visitors on the gallery; while the house at Balham speaks only of the trim respectability of fifty years ago or thereabouts. Thus the former calls for a little artistic treatment in selection of the point of view, and the introduction of some suggestive detail, such as the horse omnibus, while the most ordinary of commercial photographs exactly hits off the character of the latter.



CHÂTEAU KINGOT, DOL, BRITTANY.

CHAPTER III.

DISTANT VIEWS.

IN spite of the apparently contradictory assertion at the commencement of the previous chapter, we all know that first impressions are of importance. They establish prejudices, likes, or dislikes, which are difficult to overcome and in the case of buildings, at any rate, the first impression, usually that imparted by a general, comprehensive view, is frequently a more correct one, even to the trained architect, than is that acquired after long and careful study of the details ; the points which appeal to us most strongly at first sight being always the obvious and the powerful—the general massing of the whole, the outline, and the agreement between the building and its surroundings.

These are the things, then, which have to be kept in mind when taking photographs of distant buildings. A topographical view of a whole city from the cathedral tower has its uses as a geographical record, but it is not that which is intended here—but rather a distant view of some

one building, or group of buildings, such as to bring out its general characteristics of majesty or weakness, size or insignificance, as considered broadly, and without more than passing attention to date, or style, or detail. The difficulties are great, and if at the same time it is desired to produce a picture they are considerably enhanced, and to the writer at least it has proved easier to obtain the desired effect by

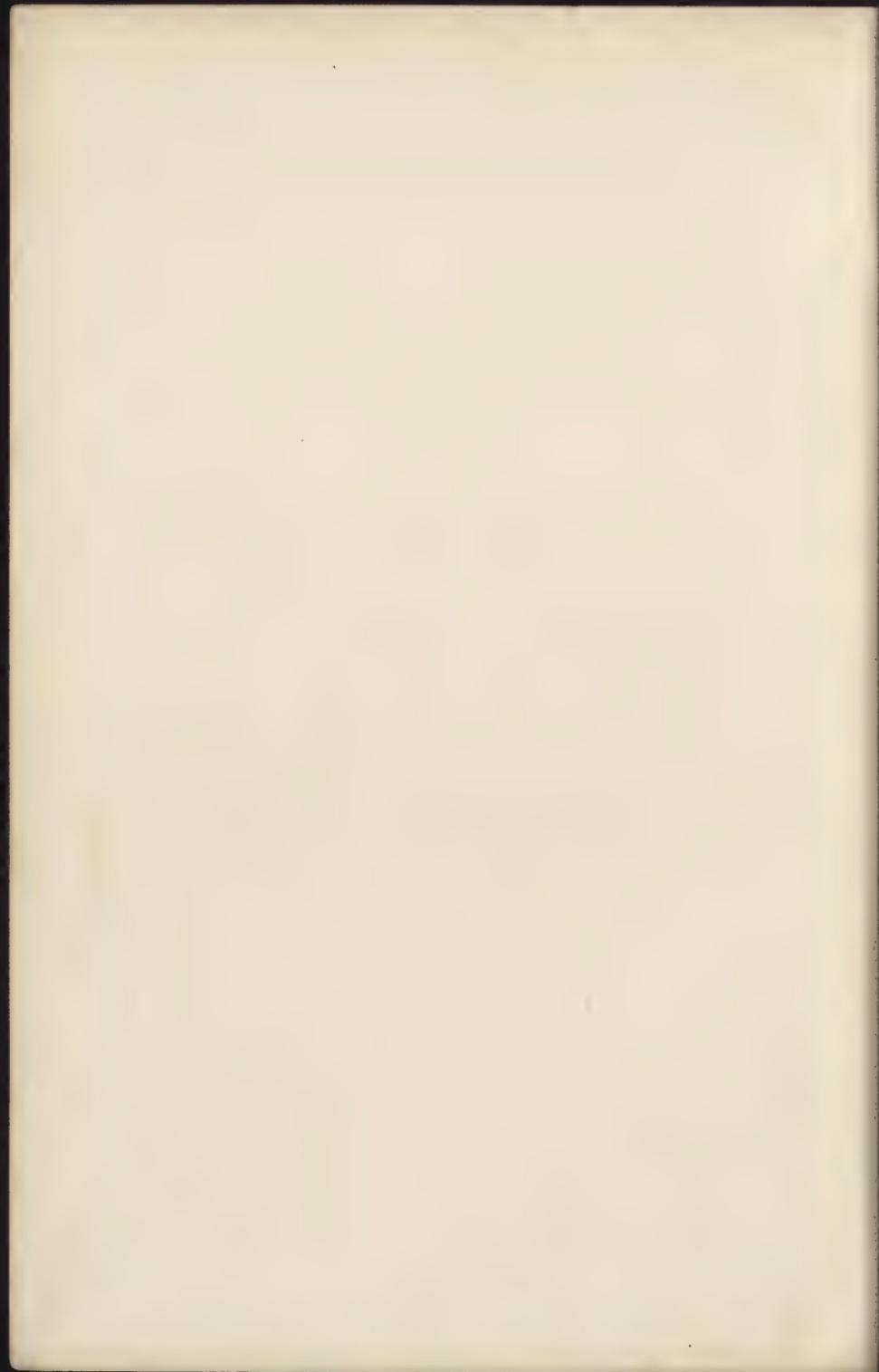


ON THE PEGNITZ, NUREMBERG.

means of the pencil than with the camera. This may, to some extent, be due to laziness, for it is easier to carry a sketch-block than a stand-camera, an outline showing general mass is made as rapidly as is a plate exposed (with the necessary erecting of the tripod, focussing, etc.), and all further trouble is avoided; while the finished result is produced on the spot. Still, the work *can* be done with the camera if sufficient pains be taken, quite as well, and



COLOGNE CATHEDRAL, FROM ACROSS THE RHINE.



in some respects better than by any other means, though the way in which the lens absolutely refuses to ignore an undesirable interposed object is often annoying.

After selecting a point of view, the most important consideration is that of the light and prevailing atmosphere. A crisp, well-broken sky-line, like that exhibited by the roofs of Château Kingot, at Dol, with no great tale to tell, which to English eyes is pretty, quaint, and worth recording for that reason only, needs sharp focus and clear lights. Bright morning sunshine, exact exposure, sharp focus, and small stop will render such a view most accurately, and probably a highly glazed gelatino-chloride paper would prove the most suitable printing medium. Its very essence is brightness, vivacity, and activity, even the simplicity of the circular cider-press in the foreground only assisting in emphasising these qualities.

Quite different is it with the general view of Cologne from across the river, where the impression to be conveyed is that of a mighty pile rising in mystic grandeur, and dominating both the great city and its noble river too. This is such a subject as is frequently attempted, and generally badly done. The cathedral itself requires to be no more than a misty, hazy outline, that the imagination may have full play as to its vastness and its beauty. The impression of size can be easily added to or detracted from, also, by means of the accessories, and is here greatly helped by the inclusion in the view of the tower of the Romanesque Church of St. Martin, a trifle nearer and more distinct, while the bridge of boats, and the strip of nearer river-bank, with the figure standing against the railing, assist in rendering the distance, helped with the aid of sharp focus of the foreground, and the use of a large stop—a diffused light being best, with a slight haze. A real mist, however, would

spoil everything, by blotting out the cathedral and even the further river-bank from view.

What is usually called bad photographic weather was used, not from choice so much as from its occurrence when Nuremberg was visited, when the view upon the Pegnitz was obtained; for the sky was overcast, and a slight mist falling. Yet the result is a picture in low tone representing well the quiet mediæval character of this wonderful town, than which no other of its size succeeds better in putting back the hand of time to the period of the later Middle Ages.

Sombre, weird, and yet romantic, this city stirs the imagination in a fascinating, curious manner; and is best rendered photographically in low tones, and doubtful focus.

CHAPTER IV.

EXTERIORS.



From Photograph by the Author.

erected to express some one simple idea, the same pervading mass and detail alike, and amongst them were some of the

S one approaches more nearly to a building, the parts begin to stand out from one another and the detail is more clearly seen.

In the place of one general mass expressing one simple emotion, all that goes to compose that mass and that emotion is discovered, bit by bit, by slow degrees. Consequently a slowly changing difference of treatment is required in the photograph, if the effect is to be rendered suitably.

There have been buildings which were

greatest buildings which the world has seen, notably those of the Doric order in ancient Greece ; and when dealing with such the photographer cannot easily go wrong. The



ST. GUDULE, BRUSSELS.

whole of the building is to be seen from almost any point of view—composition is out of the question, everything has already been done for him by the original builder except the actual taking of the photograph ; and he can probably

best render its beauty and its effect by skilful craftsmanship, by correct exposure and careful choice of stop, to give a clear and crisp result, trusting to the extreme loveliness of his subject alone for the production of a fine photograph—for such buildings are rarely to be found save in countries having a clear atmosphere and cloudless sky.

Very different is it with any building having even the slightest Gothic feeling. Instead of one simple emotion there are many complex emotions expressed in a complex building, and as the emotion of mystery is always one of those excited, with the evident intention on the part of the builder to lead a spectator onward to search for hidden beauties, therefore is the whole never to be seen at once or from one single point of view. Consequently any attempt to obtain such a general comprehensive view is almost invariably doomed to failure, both artistically and emotionally.

It is almost impossible to over-emphasise this point. Nearly all the photographs of architectural objects which one sees are spoilt by this effort to show too much—to show at once all that there is in a building of many parts built to serve different purposes and at different dates. Some dominant feature or emotion needs to be seized, and any others which may be permitted to be present should be subordinate to that one and lead up to it. There must, in fact, be focus in the pictorial and not the photographic sense to produce unity, the ordinary laws of pictorial composition holding good just as much as in a landscape, while they have possibly more to tell.

As an example of what is meant, two views are given of Dol Cathedral, being two portions of the same print from the same negative. Somehow, before being cut in two, the print was unsatisfactory, and a little consideration showed that,

artistically, there were two *foci* and conflicting lines, one *focus* being in the brightly lit windows of the transept clerestory, and the other in the light patch over the western door, while the lines of the west front, vanishing towards the right, clashed badly with those tending towards the other focus. Then, emotionally, the transept



WEST FRONT, DOL CATHEDRAL.

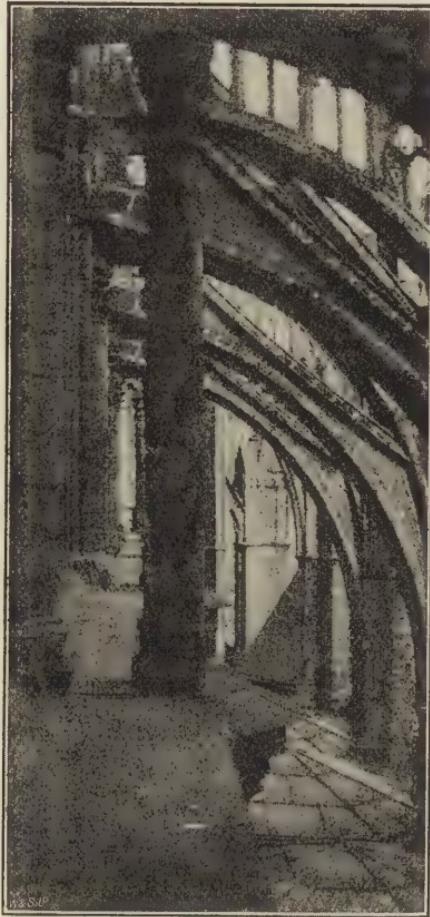
view, with the vertical lines of the buttresses and the tracery of the windows, tells of aspiration and delicate perception of the refined and beautiful, while the plain west front, with its massive flanking towers of a much later date, gives an impression of awe-inspiring solidity. In both portions there is peace, with present neglect and desolation expressed as a subsidiary emotion, but not



WEST FRONT, AMIENS CATHEDRAL.



obtruded so strongly as to interfere with those which are dominant, and which, in fact, it assists by contrast.



FLYING BUTTRESSES OVER CHOIR
 AISLE, AMIENS CATHEDRAL.

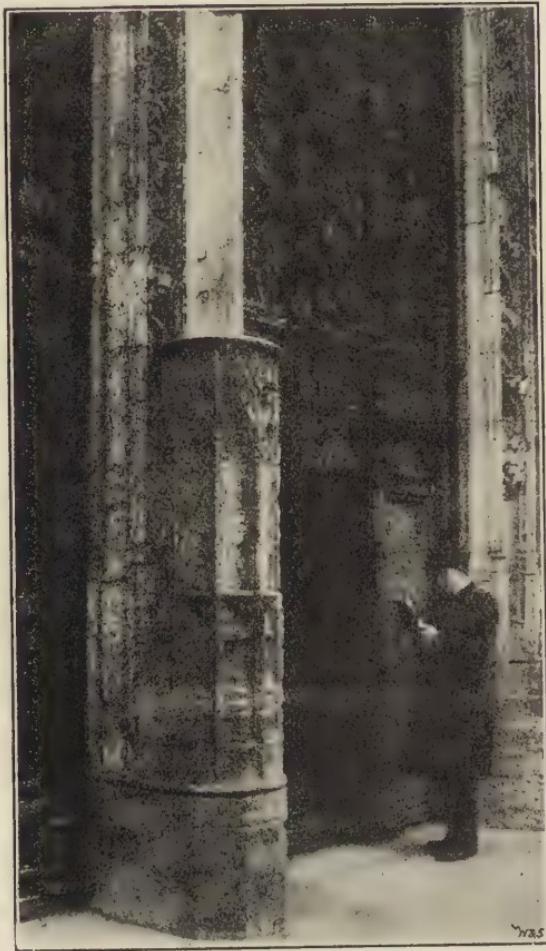
Another common mistake is that of taking a view of a front dead-on. All mystery immediately vanishes, and

an architectural diagram of an elevational character is obtained in place of a picture, with all the educational value of a measured elevation drawing lost through the foreshortening due to perspective, which there are yet no vanishing lines to discount. It is much better, therefore, to get sufficiently to one side to show the flank slightly as well as the front, and so to point the camera that even the

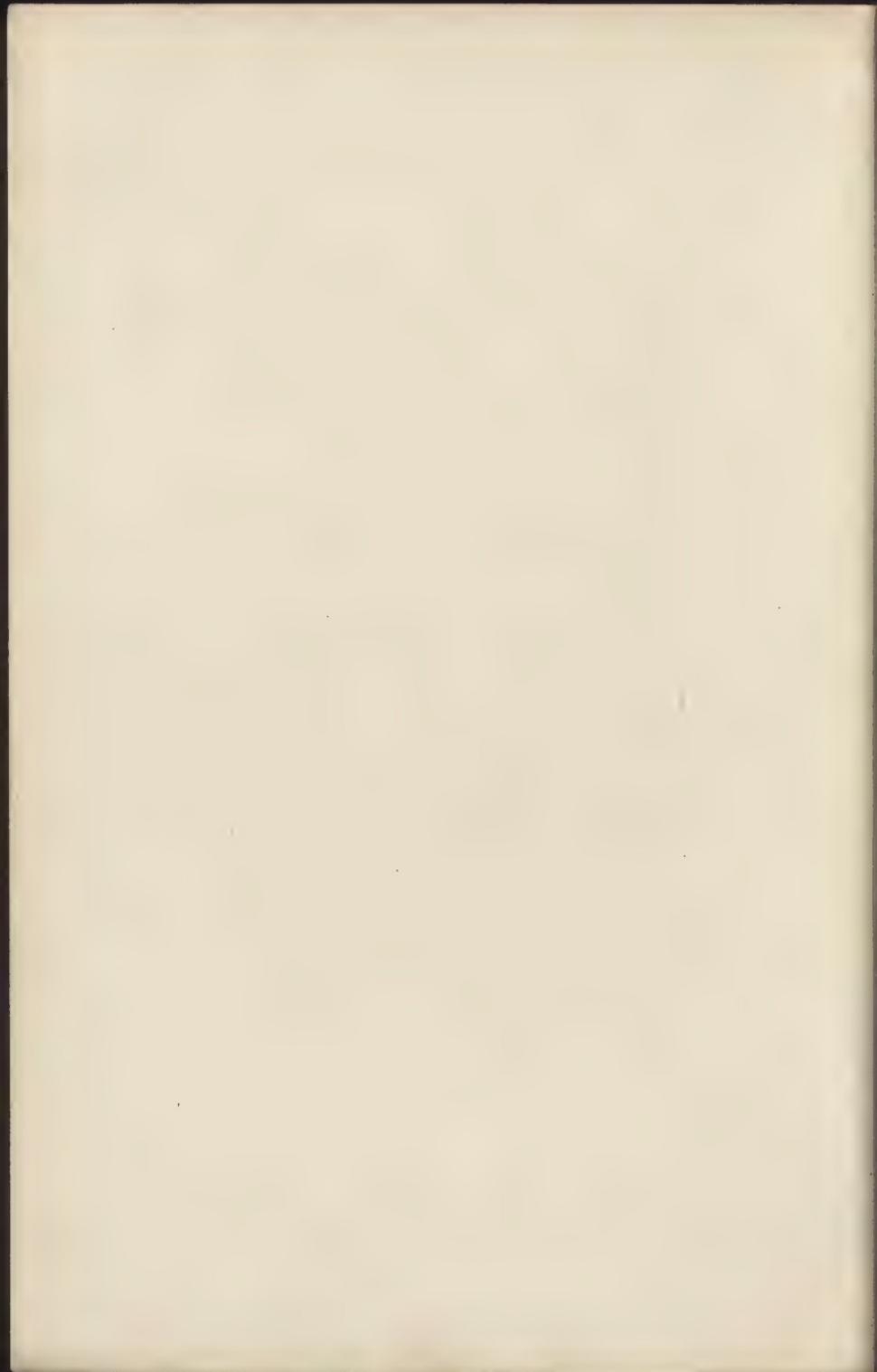


SOUTH PORCH, DOL CATHEDRAL.

lines of the main front have a vanishing point, though it may be a distant one. As an example of what is meant, the west front of Amiens Cathedral is illustrated—one of the very finest Gothic façades in Europe, and one which would make a fine elevational drawing; but a photograph taken from a point precisely opposite the central door would not look well, nor give the *raison d'être* of the front



SOUTH DOOR, BEAUVAIS CATHEDRAL.



so well as does the view showing the flanking buttresses of the nave.

The view of Brussels Cathedral illustrates another and a less common difficulty. Standing upon a steep hill, the exterior is exceedingly difficult to photograph, the views generally obtained of the west end being eminently unsatisfactory. It is also late in style, flat in surface, and wire-drawn in detail. There is much, therefore, that has to be controlled if a pleasing result is to be obtained, rendering the general massing of the parts in light and shade at all correctly, obliterating detail in the shadows, and adding emphasis and force to those exposed to light—in fact, strengthening the good points of the building and keeping the bad ones in subjection.

Just as every building differs from all other buildings, both in design and in expression, so does each feature differ from all other features, with the family resemblance of similarity of general intention apparent in all of the same class. And this general intention is always an obvious and generally an utilitarian one. Windows are intended to give light, doors signify welcome, buttresses are for support, and so on. Yet there is a great difference between the thirteenth century narrow slit of a window, intended for nearly clear glass, and the large traceried opening of the fifteenth century, filled with richly coloured designs, and admitting, in spite of its size, but little more light. Similarly the great welcoming portals of the thirteenth century, such as those of Peterborough and Amiens Cathedrals, are by no means the same things as the sheltering porches of two hundred years afterwards. And again, so on, and so on. Thus it will be seen that, on close approach to a building, as each feature is observed by itself and apart from its relation to the whole, each has its tale to tell, each is worthy

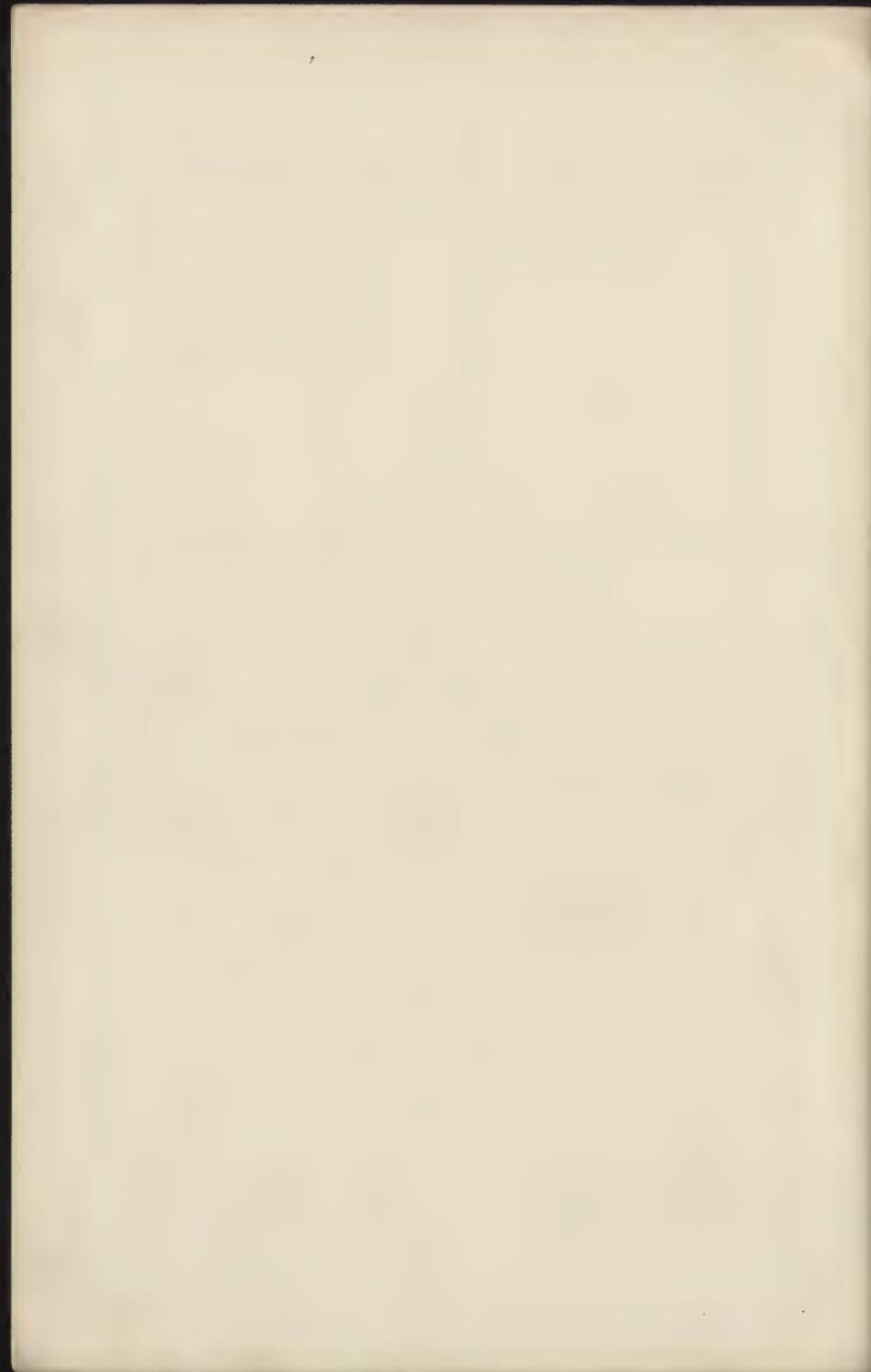
of separate study, and each will make a photographic picture.

Here particularly it is necessary to repeat a word of warning, already uttered once at least. When dealing with separate features, the temptation is a great one to place the camera exactly opposite the object to be photographed, and focus sharply. The result is an architectural elevation, a diagram fitted to illustrate a book or lecture upon architecture intended for architectural students, or to serve as a "crib" for an incompetent designer; yet, even in these respects, far behind a carefully-made outline drawing with all the parts to scale, and proper sections of the enrichments given. Granting that there are times when such a view is not only permissible but right—when, for instance, an exact elevational record is required, pressure of time not allowing a drawing to be made, or the person requiring the record not having the necessary training and skill for the making of such a drawing; granting this, it yet remains that the correct use of photography is to show the composition in perspective, as a composition, as it was intended to be seen, with light and shadows, projections and recesses, all holding their right and intended relations to one another.

In this manner, in representing at once the utilitarian function of the feature considered, its history, and the intention of the architect who designed it, photography can do more than the pencil or the brush—to the generality of mankind the photographic representation properly and feelingly made, tells more than the diagram, to which it is a most valuable supplement from the archæologist's point of view. Every one can understand a photograph, but it needs long training to comprehend a diagram drawing, and in the mind transform plan and elevation into mass and form. And it is not merely a matter of mechanical understanding.



NORTH-WEST TOWER, ST. PAUL'S CATHEDRAL.



Carefully sought, each well-designed feature will be found to possess all the essentials of a picture. Line, tone, focus, gradation, and all the rest are there, and the photographer can bring them out and emphasise them, and even negative or suppress much of what clashes and is bad.

The accompanying illustrations are all from negatives taken primarily for the architectural student, but to supplement rather than to supplant the line drawing, and they possess qualities which no line drawing could have, combined with an exactitude of proportion and perspective which a drawing in wash could feebly represent. Whatever has been attained, there has been a striving after the pictorial also, and the representation of the sensation inspired by the building.

The leading note of the porch at Dol is *rest*, of shelter and repose after exposure, but it is combined with desolation. On the other hand, the photograph of the door at Beauvais was made for quite a different purpose, awaking no emotion which can be named, but representing the tone contrast between the dark oak doors and the light-coloured stone-work in which they are set. Emphasis is also given to the vertical lines; and, while there are several interesting points of detail, the lesson for the architect is that the close juxtaposition of work in such different styles as those of the door (Renaissance) and the doorway (Flamboyant Gothic) is by no means necessarily inharmonious.

The other two views were taken from positions to which few people care to carry stand-cameras, yet many a good thing, photographically, is to be got by toiling with one on to roofs, and up turret stairs. The flying buttresses over the choir aisle at Amiens were, of course, photographed to show their construction, which, with the supporting columns, is a trifle peculiar to English ideas, and is an example of

either wonderful temerity or wonderful scientific knowledge (for the science is exact) upon the part of its builders. The tower of St. Paul's, on the contrary, was not taken for its own sake, but in order to show the deep well curiously, and many think wrongly, left between the nave and the flanking wall over the aisle ; yet it forms the central object in the picture, and, being thrown out of focus, rises out of the misty, mighty city beyond, presided over by its great cathedral.

CHAPTER V.

INTERIORS.



SOUTH CHOIR AISLE, NOTRE
DAME, LAMBALLE, BRITTANY.

HERE is no branch of architectural photography to be compared in difficulty with the ecclesiastical interior; yet none is more frequently attempted, or with so light a heart. There are, to begin with, certain technical difficulties to be overcome, which may almost be called traps to the unwary, so likely is attention to them to absorb the photographer's interest to the exclusion of all else. Halation is provided against—a point of view selected to avoid brilliantly lit windows, and yet include as much as possible of the great cathedral nave—the camera is carefully levelled and the front raised, a wide-angle lens is used to get in all the vaulting possible, a small stop is employed for definition, and a long expo-

sure is given after careful focussing to a distant window. This is the usual and only procedure, with the natural result, as recently expressed in the *AMATEUR PHOTOGRAPHER*, that all interiors are alike!

One thing, and one thing only, is lacking—a sense of the purpose for which the building was designed. Yet

clearly this should govern all other considerations, not necessarily to exclude them, but to control and bring them into subjection. Primarily, a church is intended for worship, and it is therefore incumbent upon the photographer to suggest, in his picture, holiness, peace, sublimity, mystery, with other emotions. These are difficult things indeed to represent—how difficult is well shown by the almost universal avoidance of church interiors by the painter, who, with colour at his



ST. MARY'S CHURCH, DOVER.

command, has possibly greater facilities for expressing them than has the photographer.

Let us see how they influence the technical points already mentioned.

Halation, to a minor extent, is often useful as giving distance and suggesting mystery. Generally better avoided, it may be used with care.

The point of view should certainly be carefully chosen, but not of necessity to include as much as possible. A diagonal view is frequently most interesting and suggestive—it is rare, indeed, that one introducing parallel perspective, by pointing the camera axially down a nave, is successful pictorially, though the English system of pew seating occasionally forces one's hand. If attempted, the parallelism must be absolutely true, or the effect will be unhappy. Brilliantly lit windows, in spite of their liability to halation, are frequently great aids to solemnity of effect. Perfect levelling is essential to avoid distortion, and the front must certainly be raised, to cut off unnecessary foreground; but a wide-angle lens is most frequently a mistake. There is almost invariably want of visual truth in a wide-angle view, so that what is gained in amount is more than lost in quality.

A small stop is also at times a mistake. It has the effect of rendering foreground and distance with equal clearness, and so destroys the impression of distance, and likewise that of mystery, unless these are obtained by more than usually careful tone gradations. If a large stop, however, be used to give distance, obviously it must be a



SOUTH TRANSEPT, SOISSONS
CATHEDRAL.

near object and not a distant one which must be in sharp focus.

As to exposure there is room for much difference of opinion. If you want to discover, by photography, details of dark places which the human eye cannot see, expose for weeks if necessary; but if you wish to convey the general

impression to others which a sombre interior conveys to you, expose accordingly, and be content that detail shall remain hidden away in deep shadow. Taking the illustrations as examples, the well lit and consequently distinct vaulting of St. Loup, at Namur, by no means appeals to one's higher nature so well as does the impressively dark vaulting of Brussels Cathedral.

Churches, like landscapes, will appeal to different people in different ways, and each

man must exercise his art to discover and show to others the impression he himself receives. To the writer, St. Gudule, at Brussels, was particularly solemn, the church at Lamballe full of peace, while St. Loup, at Namur, seemed eminently suited to the gorgeous pageantry of the Roman ritual. Soissons, recently restored (and well



ST. LOUP, NAMUR.

done too) needed toning down, being staringly black and white at present, but yet extremely elegant; while the homely little Norman (or pre-Norman) church at Dover would have been pictorially impossible but for the modern fresco, giving texture to but not destroying the breadth of the blank western wall.

Each of these interiors, too, contains some point of archaeological or architectural interest. In St. Gudule, it is the plate tracery in the triforium; at Lamballe the introduction of tracery between the chapels off the choir aisle; at Soissons the large, well-lit chapel entered off the triforium, and also the stilted of the arches; at Namur, the wonderful cameo-like vaulting, added as the crowning feature to a Renaissance church of a rare and noble type. St. Mary's Church, at Dover, is of greater interest still, for in the nave lies buried Stephen the Plantagenet, so it is believed; and even of what the photograph reveals the depressed horseshoe arch and outward



ST. GUDULE, BRUSSELS.

leaning piers, built so and not the result of settlement, are rarities for which it is difficult to account, especially if they be, as is supposed, pre-Norman in date.

To illustrate such points is one very proper use for architectural photography, but to employ the art to



VAULTING TO NORTH AISLE, ST. LOUP, NAMUR.

(*From a photograph by Mr. W. Furley.*)

rouse again the sentiments of the long-dead builders is something much higher, and something, too, which can be attempted even by those who are ignorant of architectural styles.

A church, too, must be unusually devoid of interest which

does not, internally as well as externally, possess features which are worthy of consideration of themselves, apart from the general effect which they assist in creating ; and this not merely architecturally but pictorially also. Obviously,



SCREEN IN MARTYRDOM, CANTERBURY CATHEDRAL.

however, the purely architectural here claims more prominence than in a general view. The detail is nearer to the eye, and general effect depends more directly upon it ; how much to show and how much to suppress is a matter of individual taste and judgment in each case. One great law alone is of universal application : that the purpose of

the feature should in some way be suggested, even if, in order to do so, a good deal of the surroundings should have to be included in the picture. Fonts, pulpits, screens, roofs, and in foreign churches confessionals also, come within this category, with many other features of more rare occurrence ; and each needs careful handling if, in



PARCLOSE SCREEN, IGHTHAM CHURCH, KENT.

addition to showing off the architectural beauties, it is intended to produce a picture.

Speaking generally, avoiding consideration of those exceptions which frequently arise in a more or less pronounced degree, and call for special treatment, it may be said that a font should be represented as expressing welcome ; a pulpit, declamation ; a screen, retirement ; a roof, protection ; and a confessional, privacy. Usually the architectural treat-

ment emphasises these obvious essentials, and the photographer has but to grasp and render truly the architect's intention, with such light and shade, and tone and grouping as will best contribute thereto. Even this is not easy—it is a matter of skill and knowledge and experience, and each man must work out his own salvation ; but in many an instance the original meaning has been lost sight of in subsequent alterations ; colours have faded, or colours added where never meant, or the surroundings have been changed and then the task becomes indeed a hard one. To the original meaning the photographer has not merely to return, but he has to suggest present and past at once, and awaken that human sympathy to which all old buildings, good or bad, necessarily appeal in more or less degree.

The parclose screen in Ightham Church is simple, to take our illustrations as examples, and being contemporaneous, or nearly so, with the church, shuts in a family pew, and retirement is conveyed in the photograph by gloom and under-exposure.

The other screen illustrated, that in the Martyrdom at Canterbury Cathedral, while denoting privacy, yet at the same time expresses definite invitation to enter within. It is a well-known and beautiful example of fourteenth century stonework.

Somewhat similar in intention is a chancel arch, marking the distinction between chancel and nave. In small examples such as this, it performs the function sufficiently without a screen, but in greater churches a screen is almost invariably inserted also.

In the vaulting to the North Aisle of St. Loup, at Namur, Mr. Furley has aimed at an architectural representation of a piece of wonderful cameo-like ornament in different coloured marbles, and to secure this has very wisely

neglected to correct camera tilt. With other than a pictorial object in view there had been different treatment, but tone and distance have been well represented, besides securing that sharpness which, under the circumstances, was essential.

It will thus be seen that with interiors, as with exteriors, each minor detail and feature has its own tale to tell, subordinate to and yet contributing towards the general effect, which is therefore of necessity complex. Still there is always some one sentiment which is predominant ; a feature may be interesting, but it is rarely impressive ; and in representing the whole it is that which is impressive which must be first sought and expressed, and the merely interesting kept in due subjection to it.

CHAPTER VI.

DETAIL AND ORNAMENT.

IT is now generally well understood that each different form or kind of ornament has some one definite object, and especially is this the case when applied to ornamentation used, as it generally is, not for its own sake, but as a means of enriching a wall or a building. Thus, high-relief sculpture is usually employed to decorate massive work, or, at least, work of large parts and demanding considerable contrast of light and shade in its ornamentation, and more particularly this is the case when it is placed far away from the eye. Low-relief carving, on the contrary, is intended to be seen quite close, and is not so much employed for its own sake, as to serve as a background for something more bold. Take heraldic devices, for example: we frequently see that plain shields are placed upon rich backgrounds of very fine work. Again, as quite a different example, take the nave of Westminster Abbey, in which the strong main lines are softened by the wall being almost covered with a small pattern in low relief, which, too, serves the further purpose of giving texture to the whole building. Now the photographer's treatment necessarily depends upon the purpose which the detail he is rendering was intended to serve. There is always a great temptation to exaggerate the lights and shades, in order to represent more perfectly the great beauty of this delicate arabesque work or diaper carving as the case may be,

instead of which the obviously proper method of treatment is to consider the subject photographed as a whole, and to keep the low relief in proper subservience. Of course this does not apply in all cases, and especially when a



CARVED OAK JUG

(Formerly in the Author's possession, now in South Kensington Museum.)

photograph is required for some technical illustrative purpose, while there are also some subjects which are better treated in this way than as a whole. The wall slabs in the Assyrian galleries of the British Museum

are a case in point. These were arranged in much the same position at Korsabad or Koujunjik as they now occupy; that is, they formed a series of pictures round narrow rooms at the level of the eye, and were intended to be examined in detail. Their relief, too, is wonder-



ARCADE IN JAMB OF WEST DOOR, CATHEDRAL OF NOTRE DAME, PARIS.

fully low, there being rarely more than half an inch between the highest lights and darkest shades, and yet within this small margin we have depicted every phase of active life and most elaborate detail.

Here accentuation is right; nor is it greatly out of place in photographing such an isolated object as the

carved jug, of which an illustration is given; but in the case of the arcade in Notre Dame it would have been absurd to arrange the point of view, the focus, the exposure, and the printing for the sake of the central incised patterns which fill up the blank wall space behind the arcading—or even for the renowned ironwork upon the door—when it is the arcade itself, with its fine general lines and bold work in the spandrels, which is the main object it is sought to represent. Thus control and careful self-restraint will generally secure more pleasing results when dealing with low relief, as in many other branches of photography, than will any attempt to obtain all that is possible from the camera and its lens.

The photography of architectural detail has before now been recommended to the tyro on the ground that it is easy, the object to be photographed being absolutely still. At the same time, this advantage is considerably discounted by other disadvantages, and to obtain a satisfactory photographic representation of a piece of architectural ornament is not the easy thing it appears to be at first sight.

From a technical standpoint the principal difficulty is the lighting. The object cannot be moved—unless, indeed, it is quite a small fragment in a museum. The proper timing of the exposure consequently demands much experience, and the contrasts are often over-strong. Thickly coated and tolerably slow plates are preferable, allowing considerable latitude, and those with multiple films have advantages which no others possess. Isochromatic plates and coloured screens are sometimes advocated, especially where there are traces of colour upon the ornament, or where the stone has become weather-stained; but the effect is sufficiently well rendered by good thick films.

On the other hand, if the immovability of the subject

presents difficulties of this sort, it is well to bear in mind that its position is that which it was designed to occupy, and that its lighting is that which was intended for it.

An architectural ornament is not always meant so much to be a thing which is beautiful in itself, but as a piece of enrichment deliberately placed in a certain position in order to have a definite and predetermined effect upon the building as a whole. Bearing this in mind, it will be readily understood that false or artificial lighting is rather to be avoided than sought, and that objects in museums are thus more difficult rather than more easy to render truly.

Beyond this, there are further considerations to bear in mind, due to the peculiar feeling of the period when the work was executed, the individuality of the artist designer, and the material in which he wrought. The photographer, to be thoroughly successful, must to some extent sink his own individuality in that of his predecessor of possibly many centuries ago, and strive to enter into the feelings and aspirations of him who originally conceived the work



DOORWAY FROM A PLACE AT GENOA
NOW IN SOUTH KENSINGTON MUSEUM.
(From a photograph by Mr. W. W. Allport.)

which it is intended to portray; but he has to add to this, in most cases, those sensations of veneration which all old work will produce. All this is difficult, and seemingly contradictory, but it awakens the artist in a man—for every man is an artist, in more or less degree—and makes



SQUARE CAPITAL OF THE TEMPLE OF ATHENE POLIAS AT PRIENE,
NOW IN THE BRITISH MUSEUM.

him, by feeling and inspiration rather than by logical reasoning, produce good and artistic work.

The illustrations but faintly indicate what is meant. They are illustrative each of one of the three greatest periods of architecture, one being Grecian Classic, one French Gothic, and the other Italian Renaissance; and the basic inspiration of all art was essentially distinct at each

of these times, neither being quite in harmony with our own days. Two of the objects suffer considerably, also, from being photographed in museums, amid totally different surroundings from those which they were intended to be amongst ; and the capital at least is seen from a different point of view, and with utterly different lighting from that which was possible when it was *in situ*. On the other hand, the Gothic arcade from Notre Dame, at Paris, is represented as it was intended to be seen, even the figure, placed there to give scale, being in harmony with its spirit. The carving is shown in all its original vigorous roughness (contrast it with the high finish of that on the Genoese door), and the rich balance is enhanced by the soft ornamentation of the background, giving "surface" and throwing the more prominent parts into strong relief. Thus the Gothic appeals to what is forceful in our nature ; but equally admirable are the more delicate beauties of the other styles, charming by display of perfect adornment and exact workmanship.



TIMBER HOUSE AT ST. BRIEUX,
BRITTANY.

CHAPTER VII.

STREET VIEWS.

THE photography of street views is a thing to itself, distinct from all other branches of photography. Here architecture is met with, not of a simple but of a complex kind—it is not the architecture of one building or even of a group of buildings intentionally grouped to form one whole, but of a miscellaneous collection of buildings, arranged haphazard. Architectural knowledge is consequently of little avail in the production of a pleasing picture; in fact, it may well become an actual barrier,

tempting to the photography only of that which is architecturally good to the neglect of that which is plain or commonplace, but which is quite essential, either as a foil or for the sake of repose.

Such a view is more usually a study of line than of anything else, the perspective being sharp and lending itself both to very good and to very bad composition. Tone, too, plays a prominent part.

Both these, however, have got something to express, and that something must be the spirit of the place—and the

architecture chosen to be represented must also be subservient to this general idea. There are places which were once busy cities whose prosperity has passed away, yet some of whose buildings are yet apparently crisp and new —to represent such places similarly to quiet “sleepy



OLD HOUSES, DINAN, BRITTANY.

“hollows” would be an evident mistake; yet to include these buildings even in a photograph taken as typical of the town would itself be of doubtful wisdom. And of this sort of incongruity there is no end.

With the great employment of the hand-camera there seems to be a rage for snap-shots of busy streets crowded



ST. JACQUES' TOWER, ANTWERP.

with people, quite regardless of the fitness of things or of the production of pictures. Yet few things are more difficult than the representation of such scenes. When snapshotting there is rarely time to consider all points properly—

something or other is almost sure to be in-harmonious.

It is much easier to represent "sleepy hollow," and much more satisfactory. It may be taken in sunshine or in rain, in morning or in evening, and almost always it is charming, so long as the lights and shades are not in too great contrast. Rest is the key-note, and rest is exactly that which photo-



graphy can best express, infinitely better than it can the restless activity of modern life ; unless the photograph be of



A STREET IN DINAN, BRITTANY.

the "animated" kind, and then the result is a mechanical rather than an artistic expression of activity.

To turn from generalities to particulars, it will usually be found advisable to "close the view," as the technical

phrase is, with some prominent object to which, whether it be near or distant, all else leads, and this is particularly necessary if both sides of the street are included in the view. Three illustrations are given of this. St. Jacques' Tower at Antwerp is in the foreground, and to have shown both sides of the street would almost necessarily therefore have been a mistake; but the church in the street view at Dinan is in the middle distance, and Antwerp Cathedral spire is in the background. These pronounced features, too, give an apparent reason for the picture—invaluable, nay, absolutely imperative, in all cases. Sometimes streets and groups of houses, which are fascinatingly pretty in their colour and their light and shade, when seen on a bright day, make most disappointing photographs solely for want of some such feature. The writer remembers a striking instance of this at Namur, where the grouping seemed perfect to look at, and yet no satisfactory picture was to be got upon the screen.

Views including only one or two houses, yet taken along the run of a street, as exemplified in the other two illustrations, are also more than permissible—frequently the best thing to be done. This is particularly the case when these few houses are picturesque and group well in themselves, but where the street, taken more nearly "end on," would be unclosed, with vacant sky above and vacant road below, forming two triangles, apex to apex, due to the vanishing of the lines in perspective.

Vertical pictures of course result, in almost all cases, and it is better to tilt and swing to include high objects and cut off foreground, than to use a wide-angle lens, and so necessitate much trimming of the prints at bottom and at sides.



BRICK VAULTING TO MARKET UNDER CLOTH HALL, YPRES.

CHAPTER VIII.

THE INFLUENCE OF MATERIAL.

THE title of this chapter may sound dry and uninteresting; but the subject is one which has two sides. The technicalities of building material, their strength, weather-resisting properties, and the like are certainly not suitable for discussion here. On the other hand, the general effect produced by a completed building is largely due to the materials employed in its construction, and so likewise

is any photograph of the building influenced thereby; and all this is of importance to the photographer, and not without its interest.

Speaking broadly, the qualities which materials mainly confer are texture and colour. As walling materials, marble and brickwork may be each equally suitable, under



TIMBER ROOF TO THE BOUCHERIE, GHENT.

certain given conditions, from a structural point of view; but how utterly different is the effect of their employment! And the photographer who seeks to represent this effect; is he to treat the marble and the brick alike? Think wherein the difference lies. The marble is in large blocks with fine joints, highly polished, reflecting light in every shadow, delicate and pure in tone. The brickwork, on the contrary,

is made up of many small blocks with coarse joints, is of more or less rough surface, absorbs light even where most exposed, and is irregular in tone. Thus the marble, with its high finish, invites the record of every detailed beauty, while the brickwork, consisting piecemeal of nothing much else than an aggregation of faults, needs to be taken as an entire mass, in which the faults merge and mellow.



IRON GATE TO BAPTISTERY, COLLEGIALE, HUY, BELGIUM.

From a purely technical standpoint there are also differences. The reflecting power of the one material and the absorbing power of the other call for widely different exposures under the same conditions of lighting. So great, indeed, is this that it is a matter for astonishment how easy it is to over-expose on polished white marble and to under-expose on bright red brickwork, the latter being the more usual, and, indeed, a very common fault. The cure, of course, is to be found in careful observation ; but even this

is frequently at fault, and every precaution should be taken by the use of thickly coated or multiple-film plates, and by ample exposure, to provide against the result of any miscalculation.

Although marble and brickwork have been considered as forming an obvious example of great contrast, there are many others almost if not quite as noticeable, and the photographer must be constantly on the watch if he would not have his picture marred. Roofs of tiles and of slates will produce widely different results, especially if the sun be shining on them, and the writer once had a picture of a church, which would otherwise have been pleasing, completely spoilt on account of the aisle roof being of lead, which came out as a black patch on the negative and white upon the eventual print.

Iron might reasonably be expected to be dark in colour and need a long exposure, but it is by no means worse in this respect than is old oak; while a ceiling of old oak beams and plaster filling presents contrasts which demand much skill to render satisfactorily.

Thus, in architectural photography, it is needful to keep careful watch upon the material of which the object to be photographed is constructed in all cases, but most particularly in internal work where an apparently light church may be photographically dark indeed, owing to the lavish use of gold and vermillion in the decoration, and this in contrast with stained-glass windows having some portions of almost transparent glass.

Of the illustrations, it may be remarked that they are from negatives taken upon plates of quite different natures, that used for the vaulting having been dry collodion, that for the timber roof ordinary gelatine, and that for the iron gate multiple gelatine.

CHAPTER IX.

LANTERN SLIDES.



THE COLLEGIALE, HUY, BELGIUM.

treated as for a set purpose throughout.

Of all matters in this connection, that of selection is one of the most difficult. It can only be done satisfactorily by the lecturer himself, knowing his needs and the voids in his existing collection. One building may lend itself to

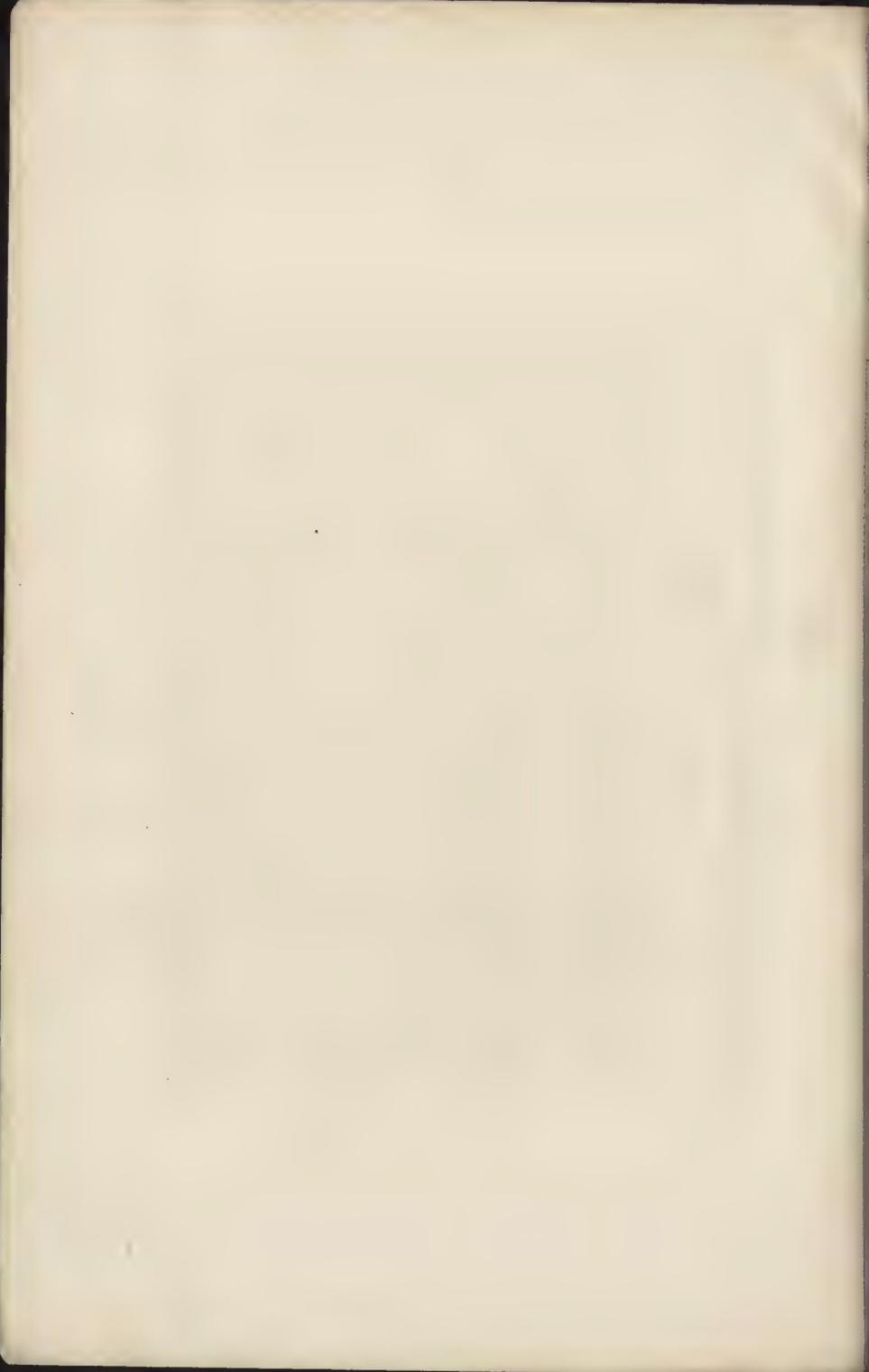
F the various purposes for which lantern slides are commonly made, few can be more exacting in their requirements than is the architectural lecture. Slides exhibiting almost every quality, from the purely pictorial to the purely technical, are required in order to illustrate such very divergent points as general massing and elaborate detail. Consequently the end which each particular slide is to serve has to be kept in view from the moment of selection of a subject to the final binding and naming ready for exhibition, each one being

picturesque grouping from one particular point of view, while from another the effect is the reverse of happy ; and he promptly takes photographs from *both* positions, to show his students what should be striven for and what avoided. Upon another occasion a point of view can be obtained which, while giving an architectural picture, will at the same time bring out several important points. Take the nave of the Collegiale, at Huy, for instance, as seen from the west end organ gallery. The exceptional points which led to the photograph being taken at all were the elaborate lierne vaulting at the crossing of nave and transepts and the extraordinary length of the central mullion of the east window. In order to emphasise this latter point, it was necessary to aim at a tall narrow picture, and to include a considerable amount of the floor, so that an extremely wide-angled lens was called into requisition, of $2\frac{1}{2}$ in. focus to a 5 in. by 4 in. plate. By then shifting the camera slightly off the centre line, a sufficient view of the transept was obtained to illustrate the elementary features of the division of the height into nave arcade, triforium, and clerestory, and also to show, if carefully looked for, that the easternmost arch of the choir is of less height than the others—one of those deliberate frauds for the purpose of accentuating perspective effects which quite recent investigation shows to have been common in the Middle Ages. Another important result of this selection of a point of view was the production of an architectural picture, this being greatly assisted by the position of the elaborate pulpit.

Of course, with brightly lit window and ill lit vaulting, both to be shown prominently, technical difficulties were to be expected ; but multiple film plates were used, without backing, and no trouble experienced—in fact, these have



FRIEZE AND CORNICE OF THE ERECHTHEUM AT ATHENS.



proved, in the writer's hands, more useful for interior work than anything else, their only drawback being the difficulty of employing them afterwards for collotype reproductions. Beside this, a small stop, long exposure, and extreme care to ensure verticality of the back alone were necessary.

Again, in other instances, pictorially bad views of ugly subjects have to be taken, to illustrate technical points; and yet again, in contrast, a beautiful piece of elaborate detail is found, sometimes well and sometimes badly lit. To move it is impossible, and so is to light it artificially, and the best has to be done under existing conditions. The example illustrated was taken in the almost studio lighting of the British Museum, and is of one of the most beautiful examples of Grecian ornament known to exist—the enriched frieze and cornice of the Erechtheum. Still, the probability is that good work will be less favourably placed for photography, and every possible dodge and camera motion has to be used at one time or another, while, rather than lose a good thing, it is preferable to secure a distorted view with tilted camera.

Invariably, slow plates are better than rapid ones, as more latitude of exposure is given—most valuable under the many variable conditions met with—and there is less risk of fog from changing plates in bedrooms at hotels, as is frequently necessary, which do not possess absolutely light-tight properties.

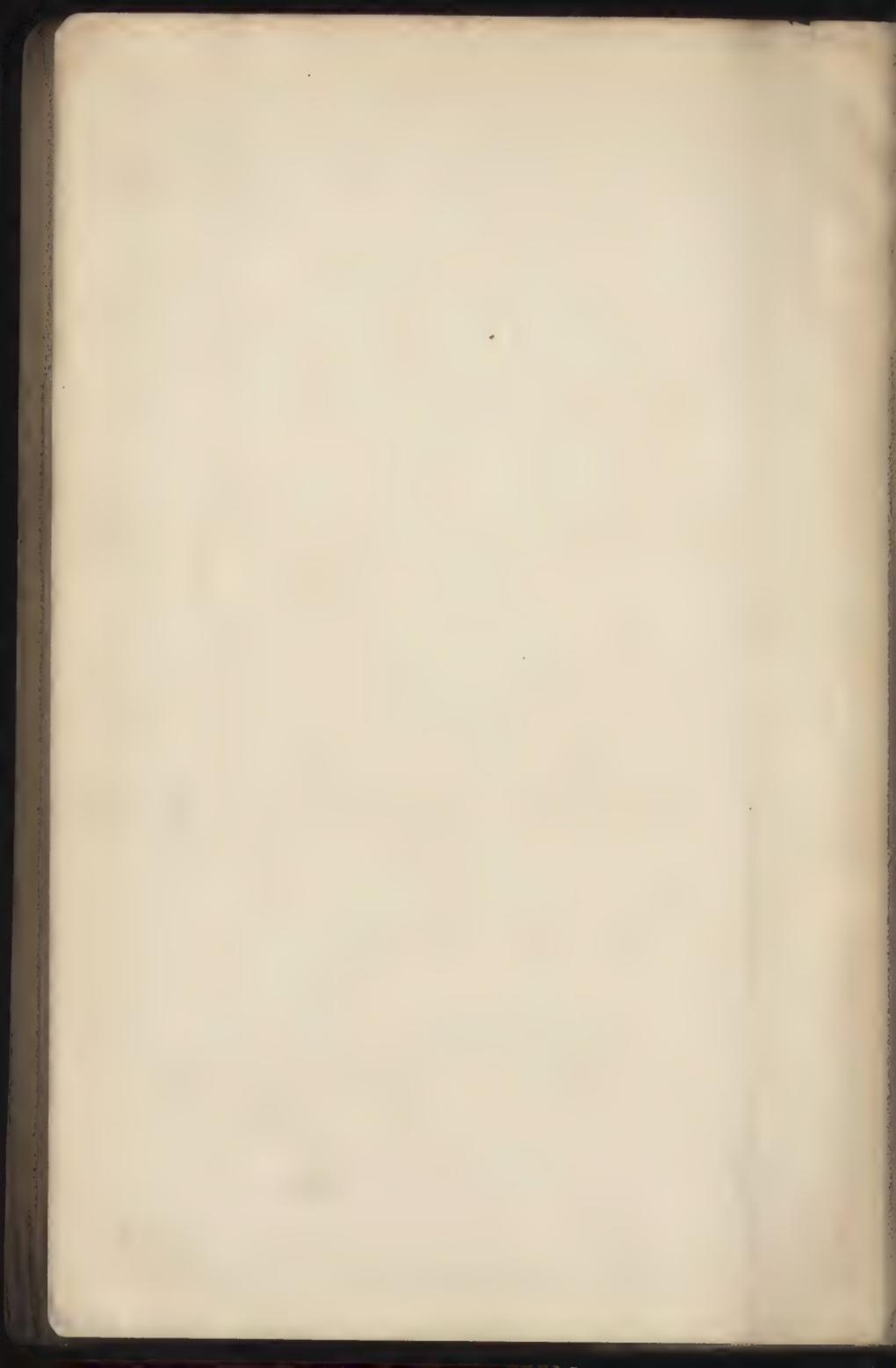
So far as the development is concerned, the main object being to produce a sharp negative without too great contrasts of light and shadow (save when reducing a plan for lantern projection) it is possible for each worker to use that to which he is accustomed; but the writer has now employed hydroquinone-soda for many years, and it has

satisfied his requirements both for negatives and for slides so well that he has no wish to change—only it has to be more diluted for negatives. The formula used is that issued with the Hill-Norris dry collodion plates, and contains a little citric acid. It seems to suit equally well all the several brands of plates upon which it has been tried.

So far as the making of the slide is concerned, the first thing to do is to pick out exactly what portion of the negative is required; for very rarely is the whole needed to be reproduced. Selection does some of this work, and masking does the rest. Then, according to the size of the negative, printing can be done by either contact or reduction, only that contact is much the more ready to the majority. The principal difficulty here, beyond those usually met with, is to retain the vertical lines parallel with one side of the lantern plate.

Warm tones are occasionally valuable in the representation of street scenes, half-timber work, rich Gothic carving, or elaborate carved woodwork, but anything of a more precise or formal kind, and particularly carving in marble, is far better if produced in quite cold colour. As the result of a good deal of experimenting in this direction, the writer has now settled down to the almost exclusive use of dry collodion. There are more failures than with gelatine, as the "limit of deviation" as to exposure is narrow, and the film is so delicate as to be destroyed by even a slight touch, though it is stouter now than it was a few years ago, and will bear a moderate stream of water from a tap; and the initial cost of the plates is slightly more. Yet, even then, the result, under careful manipulation, is so good that for purposes of demonstration of technical points to an audience it would be difficult to

surpass it, while there is also the requisite delicacy in the purely pictorial slides, and in those representing carving in low relief on crumbling, age-toned stonework, where every detail has to be shown, and yet in which clear glass and dense shadow would alike be out of place. In fact, in all cases these sharp lights and shades are edged tools, to be avoided rather than sought after—that is, they are good servants but bad masters.



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